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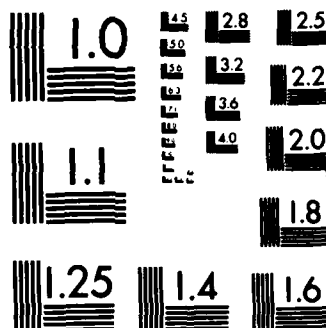
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FIRE SUPPORT EMPLOYMENT IN THE RHINE RIVER CROSSING AT
REMAGEN GERMANY

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE

by

JEFFREY L. SHAFER, MAJ, USA
B.S., West Virginia University, 1975

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This study is an historical analysis of the procedures and doctrine used by the III Corps Artillery during the First US Army's crossing of the Rhine River at Remagen, Germany. This study examines the actions of III Corps Artillery in the employment, organization for combat, and command and control of artillery units at Remagen. The fire support procedures employed by the field artillery are compared with those prescribed by published doctrine and unit standing operating procedures. This comparison is used to evaluate the adequacy of doctrine and the need for standing operating procedures to supplement the published doctrine. The development of standing operating procedures from lessons learned during earlier combat is examined to show how the doctrine allowed flexibility and standardization that was evident throughout the army. This standardization continues to serve as a model for fire support operations in today's emerging combined arms doctrine.

The study concludes with lessons learned: (1) Centralized command and control of field artillery should be under the headquarters that is best organized to control a large number of units, (2) doctrine and standing operating procedures are useless unless leaders develop and execute plans that are in accordance with the principles established and practiced, (3) the tendency to establish standing operating procedures that violate or contradict doctrine should be avoided, (4) a need for more liaison officers was evident at Remagen as well as through the war and continues to exist today even with improved technology, (5) the redundancy of tasks outlined in doctrine provides the flexibility needed to accomplish the fire support mission during a fast moving battle, and (6) field artillery units should practice several tactical missions and not just the standard mission associated with peace time organizations.

This study concludes that the standardization evident throughout III Corps Artillery was accomplished by prudent use of published doctrine and standing operating procedures. While these procedures were ignored in some instances at Remagen the flexibility necessary for the employment of the field artillery during the battle was provided by this doctrine.

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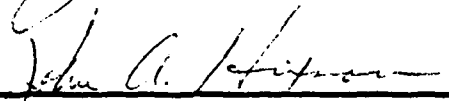
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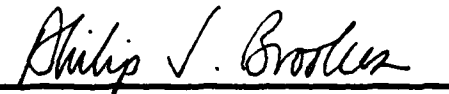
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ABSTRACT

FIRE SUPPORT EMPLOYMENT IN THE RHINE RIVER CROSSING AT REMAGEN, GERMANY

An evaluation of field artillery doctrine, standing operating procedures, and the actual procedures employed by the III Corps Artillery during the crossing of the Rhine River at Remagen, Germany 6-20 March 1945, by Major Jeffrey L. Shafer, USA, 92 pages.

This study is an historical analysis of the procedures and doctrine used by the III Corps Artillery during the First US Army's crossing of the Rhine River at Remagen, Germany. This study examines the actions of III Corps Artillery in the employment, organization for combat, and command and control of artillery units at Remagen. The fire support procedures employed by the field artillery are compared with those prescribed by published doctrine and unit standing operating procedures. This comparison is used to evaluate the adequacy of doctrine and the need for standing operating procedures to supplement the published doctrine. The development of standing operating procedures from lessons learned during earlier combat is examined to show how the doctrine allowed flexibility and standardization that was evident throughout the army. This standardization continues to serve as a model for fire support operations in today's emerging combined arms doctrine.

The study concludes with lessons learned: (1) Centralized command and control of field artillery should be under the headquarters that is best organized to control a large number of units, (2) doctrine and standing operating procedures are useless unless leaders develop and execute plans that are in accordance with the principles established and practiced, (3) the tendency to establish standing operating procedures that violate or contradict doctrine should be avoided, (4) a need for more liaison officers was evident at Remagen as well as through the war and continues to exist today even with improved technology, (5) the redundancy of tasks outlined in doctrine provides the flexibility needed to accomplish the fire support mission during a fast moving battle, and (6) field artillery units should practice several tactical missions and not just the standard mission associated with peace time organizations.

This study concludes that the standardization evident throughout III Corps Artillery was accomplished by prudent use of published doctrine and standing operating procedures. While these procedures were ignored in some instances at Remagen the flexibility necessary for the employment of the field artillery during the battle was provided by this doctrine.

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First and foremost I must thank my wife, Janis, and our son, Jared. It is only through their understanding and unselfish gift of time that I was able to complete this study.

My committee chairman, MAJ Gary Griffin was instrumental in keeping me on target and provided the skill and technique to help guide me through the mounds of after action reports. MAJ Griffin provided critical comments and excellent recommendations that expanded the detailed research facts into a meaningful document. LTC John Hixon provided the expertise of his vast knowledge of how the field artillery was employed during World War II. COL Philip Dyer accepted the task of serving as a consulting faculty member and rounded out a committee of professional artillerymen. His comments were instrumental in helping to define the thesis and narrow the topic for research. The staff of the Combined Arms Research Library was most helpful during the research phase of the thesis. I commend them for their professional and helpful attitude. Also, the staff of the Morris Swett Library, Fort Sill, Oklahoma, kindly assisted in finding those key documents that enabled the study to be completed. Without their help, this project would not have been finalized.

Finally, I dedicate this study to my father-in-law, Mr. Robert L. Meek, a proud citizen soldier who served with the 281st Field Artillery Battalion at Remagen in 1945.

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CHAPTER ONE

The purpose of this paper is to analyze the fire support procedures and doctrine employed by US Army Field Artillery during World War II and compare those procedures and doctrine with the III Corps Artillery campaign in the river crossing operation over the Rhine River at Remagen, Germany. Specifically, the research will look at the field artillery's role during crossing operations in general and how fire support planning, coordination, and control were executed in this particular case.

As a natural obstacle to maneuver, river crossings have represented a timeless challenge to commanders. As such, they continue, regardless of technological advances in battlefield maneuver, to have a considerable impact on military operations. By providing a natural line of defense they impose severe restrictions to the surface movement of forces. Therefore, by definition, the attack of a river line requires multi-level specialized preparation, both technical and tactical, directly proportionate to the strength of the forces involved.¹ The crossing of the Rhine River at Remagen proved no exception. The skills displayed by commanders at Remagen serve as an excellent example of the qualities described in the tenets of today's Airland Battle doctrine. These tenets dictate how we will train, fight outnumbered and win. They emphasize offensive spirit and are characterized by initiative, depth of time, distance and resources, agility of mind and organization and synchronization of combat power.

This thesis, therefore, will focus on the field artillery tactics employed by the III Corps Artillery at the Ludendorf railroad bridge in the context of the above tenets. Compliance with official field artillery doctrine, as published in field manuals and training circulars, and unit standing operating procedures (SOP) will be studied to determine how they enabled units to provide effective fire support in rapidly developing situations with little or no direct orders. In this regard several key questions will be answered. For example, what techniques were used to mass the fires of the numerous field artillery battalions assembled to support the expanding Rhine River bridgehead? Had a plan for the massing of this fire support been prepared in anticipation of the crossing? Were lessons learned from earlier operations applied in the preparation of standing operating procedures for crossing the Rhine River? And most important, can the actions of the field artillery at Remagen serve as a model for the fire support operations in today's rapidly emerging combined arms doctrine. This introductory chapter will discuss the methodology used in the research, the assumptions upon which the research was based, organization of the study, definition of key terms and phrases, and finally, the significance of the study itself.

An historical research methodology was used to gather the material for this study. Primary sources of information were US Army after action reports, unit journals, unit standing operating procedures, official US Government documents, Advanced Military Studies Program monographs, and other masters theses. Secondary sources included magazine articles, newspaper reports, professional journals of the period, and books written about the campaigns in Europe in general and

the crossing specifically. Once this information was collected, comparison and analysis were used to examine where doctrine, standing operating procedures, and actual practice either paralleled or conflicted with one another.

This study does not examine all aspects of the Rhine River crossing operation. Its scope and focus is strictly limited to the fire support activities associated with the crossing at the Ludendorf railroad bridge. By limiting this thesis to field artillery techniques employed during the battle itself, the study will examine the various fire support principles employed and analyze the adequacy of both doctrine and standing operating procedures in providing guidance for execution of various fire support principles.

The remainder of the thesis is organized into three chapters. Chapter Two discusses published fire support doctrine and written unit standing operating procedures. The techniques of fire support planning, fire support coordination, and command and control of artillery units are examined in order to depict the role of doctrine and other written guidance in the execution of the fire support mission. Chapter Three is an overview of the battle itself. The III Corps field artillery organization for combat and its employment of fire support assets will be described to establish a basis for detailed analysis of the aforementioned doctrine and standing operating procedures. Chapter Four compares, contrasts, and analyzes official fire support doctrine with the actions prescribed in unit standing operating procedures and in turn actions as they actually occurred at the Remagen crossing itself. Several matters of major concern that will be addressed include: Was

other artillery units. Attachment is a status and is not a standard tactical mission of field artillery. When attaching artillery to a subordinate unit the parent unit gives up command and control of the attached unit.

Direct Support- Direct support (DS) artillery is controlled by the artillery commander, but operates primarily in the support of a specific maneuver unit. A unit receiving a direct support mission is charged with providing close and continuous support to a particular unit. The priority for the fires of a direct support battalion is to the supported maneuver unit. The direct support unit positions itself so as to provide continuous fires into the zone of the maneuver unit. During World War II field artillery battalions were placed in direct support of tank and infantry companies, battalions, regiments, and combat commands.

General Support- General support (GS) artillery is that artillery given the mission of supporting the division or the corps as a whole. The command and control of general support artillery is retained by the division or corps artillery headquarters. The priority of fires from general support artillery is to the division or corps unless designated otherwise in the combat order.

General Support Reinforcing - General support reinforcing (GSR) artillery is that artillery that is to support the division or corps as a whole but is also given the additional mission of providing fires to another field artillery battalion. The priority of its fires is to the general support mission versus the specified reinforced artillery battalion. Normally GSR battalions placed liaison agents in the headquarters of the reinforced artillery battalion to facilitate the positioning of firing units and fire support planning during the conduct of the battle.

Reinforcing- Reinforcing (R) artillery is used to support another artillery battalion (usually in a direct support role). The command and control of reinforcing artillery is retained by the next higher artillery headquarters while the priority for its fires is to the unit it is reinforcing. During World War II it was common practice to place one Division Artillery reinforcing another.

Brigades - Field artillery brigades were not organic to divisions and therefore were designated a War Department Reserve Artillery. The field artillery brigade was composed of a brigade headquarters with the primary mission of assisting in the

control of a number of groups or battalions which were attached depending on the mission. The brigade headquarters was normally attached to one of the army's subordinate corps.

Groups - Field artillery groups were established in 1942 to provide a tactical headquarters with limited administrative capability to exercise command over a varying number of attached artillery battalions. As the doctrine for the employment of artillery groups developed it became characterized by a flexibility which allowed the corps artillery commander to rapidly shift artillery battalions throughout the battlefield to provide support where needed.

Groupments- When occasion required, particularly when there was a great massing of field artillery, temporary groups or groupments of field artillery units were formed for convenience in the execution of the missions. Groupings were based upon the nature of the mission to be executed rather than upon the type or caliber of weapon. Tactical unity was, as far as practicable, respected in the accomplishment of groupments.

Standing Operating Procedure - Standing operating procedures (SOP) are written procedures for the standardized conduct of specific operations. SOP normally augment or on occasion augment the guidance provided in doctrinal publications. SOP are used to shorten or provide specific details in how the operation is to be executed.

Time on Target- Time on Target (TOT) is the term used to describe those indirect fires planned to impact on a particular target area at the same time. This mission was accomplished by firing the weapons at a prescribed time (minus the time of flight) so that all of the rounds would impact at the same time.

Zones of Fire - In order to ensure that the effects of fires are distributed and massed as desired by higher commanders areas of responsibility or zones of fire are designated. The zone of fire indicates the lateral limits within which the unit must be able to provide fires.²

The significance of the battle, and the subsequent crossing of the Rhine River at Remagen, has generated a great deal of controversy.

Certainly during the battle, in the post battle period, and even after the war, it served to sensationalize American exploits for the "folks back home". Perhaps, as a result, some argue that its significance, both immediate and long range, was minor if not irrelevant to the overall strategic equation. This study does not intend to weigh the merits of the crossing or its role in the ultimate outcome of the war. Instead it will simply show the relationship between written doctrine, standing operating procedures, and the actual practice of III Corps Artillery in its ability to accomplish the fire support mission.

As mentioned earlier, and it bears repeating, the exploits of the commanders at Remagen closely resembles those actions described in the tenets of Airland Battle Doctrine. For the most part, this dynamic doctrine describes the Army's approach to generating combat power through securing or retaining the initiative. Maintaining the initiative has, afterall, proven to be an imperative to battlefield success in modern combat. The rapid movement of U.S. units on the Remagen battlefield in 1945 and the many conceptual similarities with today's Airland Battle doctrine pose strikingly similar problems for modern forces engaged in a mid to high intensity conflict whether in Europe or elsewhere. There is little doubt that in the "next" general war mechanized forces will be required to quickly react and to exploit success in the conduct of river crossing operations as much as they had to in World War II. The challenge is therefore almost a timeless one. The doctrinal procedures developed now, based on the experiences of the past, will improve the overall understanding of the tactical and technical requirements of the future.

Therefore, this study will be of particular interest to military practitioners in the study of initiative, flexibility of doctrine, effectiveness of standing operating procedures, and ultimately, the actions required by commanders on a dynamic fast moving battlefield. It is hoped that by examining the success and failures of the field artillery at Remagen future commanders will be able to make maximum use of the experience, while applying modern field artillery principles and doctrine.

CHAPTER ONE ENDNOTES

¹ U.S. War Department, Operations, Field Manual 100-5, 1944, p. 226.

² U.S. War Department, Field Artillery Tactics and Techniques Battalion and Battery, Motorized, Field Manual 6-101, 1944, pp. 28-30.

CHAPTER TWO

This chapter discusses the fire support doctrine of World War II and those standard operating procedures (SOP) developed to augment its implementation. Presented first is an overview of doctrine for fire support planning, fire support coordination, and command and control. The basis for this discussion will center around the inherent responsibilities associated with the artillery's standard tactical missions of direct support, reinforcing, general support, and general support reinforcing. After establishing this doctrinal base and discussing its role in support of a river crossing operation, the chapter will address the standard operating procedures developed through lessons learned from earlier combat operations and implemented by III Corps Artillery at Remagen.

In his book, ON WAR, Carl Von Clausewitz addressed the fact that due to the uncertainty of information available during war a positive doctrine for use at all times was unattainable. His assessment is that the commander must trust his actions to either talent or luck:

"Given the nature of the subject, we must remind ourselves that it is simply not possible to construct a model for the art of war that can serve as a scaffolding on which the commander can rely for support at any time. Whenever he has to fall back on his innate talent, he will find himself outside the model and in conflict with it; no matter how versatile the code, the situation will always lead to the consequences we have already alluded to: talent and genius operate outside the rules, and theory conflicts with practice."¹

RIVER CROSSING DOCTRINE

The writers of doctrine in the early 1940's clearly recognized the special relationship between maneuver forces and supporting artillery. Doctrinal roles or missions assigned to the field artillery left no doubt that artillery was intended to support infantry and tanks and not conduct independent actions. Official documents and publications concerning fire support doctrine were careful to describe the role of field artillery in support terms.

"It contributes to the action of the entire force by giving close and continuous fire support to infantry (cavalry) (armored) units and by giving depth to combat by counterbattery fire, fire on hostile reserves, fire to restrict movements in rear areas, and fire to disrupt command agencies."²

Artillery doctrine for supporting offensive river crossings was organized into three phases. These phases were closely related to the maneuver force's three primary objectives in river crossing operations and are depicted in Appendix One. The first phase supported maneuver objective one, which was to cross the river line, seize key terrain, and eliminate effective direct small arms fire on the crossing site. Phase two supported the attack on objective two to seize key terrain in order to eliminate enemy observed indirect fire on the crossing site. The third phase supported the final attack of the river crossing operation. During this phase of the crossing the maneuver forces seized objective three, which was the elimination of all enemy indirect fire into the crossing site, and completed the expansion of the bridgehead by securing terrain where enemy artillery and rocket units were located. With enemy artillery blinded and forced out

of range this third and final action would logically terminate with the elimination of all indirect fires on the crossing site.³

As maneuver units moved into position, the field artillery moved forward by echelon so that it could both provide continuous fire support and be in position to facilitate future operations. Additionally, the artillery, with a lower movement priority, did not interfere with the tanks or infantry as they moved to attack their positions. Artillery units were, however, placed well forward, even to the river's edge if possible, so that long range fires could be planned deep into the enemy's defensive positions isolating the bridgehead, while at the same time adding increased depth to the battlefield.⁴ Field artillery attacked observation posts and weapons positions that could observe or fire upon the units moving to assault positions. In doing so, correctly emplaced field artillery units could place effective concentrated fires on the objectives. This action also allowed flanking fire along the river as well as deep into enemy positions. Given a river crossing operation to support, the first mission of the field artillery therefore was to protect tanks and infantry as they moved forward to attack positions. Artillery for this endeavor was usually not included in the river crossing operation itself but was considered as an action in preparation for the attack.⁵ It was here that the fire support plan to support the river crossing operation began to be developed.

Artillery also supported reconnaissance and deception efforts prior to the attack. Artillery supported deception activities by firing on observation posts and positions in conjunction with maneuver units' feints. By this

action the artillery attempted to blind the enemy, force him to disclose his defensive positions and planned fires, and deceive him as to the actual point of attack. Needless to say lavish artillery assets were required to be credible in these endeavors. Another technique used was reconnaissance by fire when heavy artillery weapons were employed into specific areas to cause enemy movement or counterfire action. If successful this would disclose enemy strengths and positions. Both of these techniques offered the attacking force a better understanding of the enemy they were opposing on the river line.

When the element of surprise was not essential, the commander of the force could require the artillery to fire a preparation. This preparation was fired primarily to achieve fire support superiority. This superiority over enemy artillery was aimed at either eliminating their observation posts or neutralizing their guns, or both, and was usually indispensable in the success of the attack. The use of preparation fires or "preps" was supported by lessons learned from earlier river crossing operations such as those included in the Army Ground Forces Observer Report of LTC J.F. Jarrell.

"The Germans had of course predicted the attack and as to the approximate time and sector as long as two weeks ago which, together with their efficient defenses, prohibited any advantage gained by a surprise attack. When the artillery preparation began, naturally they knew the attack was coming. While the artillery did not produce many casualties, it did keep them under cover until crossing operations were well under way. It also demoralized communications. I believe that under the circumstances that the value derived from such an artillery preparation is greater than any advantage gained by a surprise attack without such covering fires."⁶

Concentration of the fire's effects was greatly enhanced by dividing the preparation into phases. Fire support plans in phase one called for the neutralization of hostile artillery, isolation of forces from command and control centers and severing of communications to the rear. Additionally, these fires served to protect friendly assembling forces from the enemy's counterpreparation fires. The subsequent phases continued to provide counterbattery fires to neutralize hostile artillery while firing on hostile centers of resistance, or targets along the enemy's front in support of the overall scheme of maneuver.

A prerequisite to phases of artillery support was the establishment of fire superiority. The key to fire support superiority, an almost critical necessity often overshadowed by air support both of which are often assumed, was the massing of as many battalions as possible for a short extremely intense surprise attack on one target before shifting to repeat the procedure on another. The attack on each target in the preparation was treated as a time on target or "TOT". Each target in the preparation was treated the same way, therefore, allowing little or no reaction time and preventing the target from fleeing or taking cover. In order to be most effective, "preps" were usually short and violent. Times varied from 15 minutes to as long as several hours, with between one and two hours as the norm.⁷

Having gained fire support superiority, the field artillery could then set about neutralizing enemy positions. By firing on the enemy artillery and mortar positions, observation posts, command and control facilities,

reserves, logistic sites, and forward elements, the artillery neutralized enemy defenses and denied visual observation of the battlefield.⁸ The end result of eliminating these elements from influencing the battle significantly reduced the enemy threat in the crossing area.

Normally, once friendly artillery achieved fire support superiority, the attack to achieve maneuver objective one of the river crossing operation began. The targets presented for firing during this first phase of the river crossing operation were usually small and fleeting. Due to this fact maneuver engagements were normally at ranges of only 200 to 300 yards, therefore, requiring relatively close in support from the field artillery. Logically, direct support units often found themselves heavily engaged during this phase.

Two type of fires, accompanying and protective, were used to support the attack. The accompanying fires, provided by direct support artillery, prevented the enemy from manning defensive works in time to meet the assaulting force. These fires were shifted to subsequent objectives in accordance with the overall plan as previously coordinated by the associated infantry and artillery commanders. Usually this was regulated by a specific time schedule based on probable rates of advance, by signals, or simply by a time schedule for the desired duration of the artillery fire. Protective fires, usually provided by general support artillery, had the principal purpose of protecting the attacking echelons against long range flanking fires of the enemy and/or a counterattack.⁹ Smoke and high explosive (HE) projectiles were primarily used in this attempt.

Once the attack on the river line began, the first mission of the artillery was to fire high trajectory indirect fire for counterbattery purposes and smoke for screening and blinding enemy observation of the assaulting infantry and armor formations. ¹⁰ Generally, this was achieved by direct support artillery firing rolling barrages, as accompanying fires, to lead the assault on enemy positions. At the same time, general support artillery fired concentrations on deeper targets such as artillery and mortar positions, command posts, reserve assembly areas, and movement routes in order to interdict their employment into the area of the "close in" battle. By using smoke with the advancing attack, infantry and tanks were provided a screen that could be shifted with the advance to successive targets.

Continuing the attack in phase two of the river crossing operation, the artillery had the primary mission of supporting the maneuver forces as they seized objective two which would eliminate enemy observation for indirect fires directed onto the crossing site. This required the field artillery to successfully use a variety of shell /fuze combinations. It was during this phase of the crossing operation that the enemy was expected to launch his strongest counterattacks. Therefore, maneuver objectives were planned so that strong defensive positions could be rapidly prepared where necessary while reconstitution and reorganization were quickly executed. Artillery units were especially valuable during this period of the operation. To enhance maneuver forces actions they literally "bought time" and could be relied upon to mass significant amounts of firepower to break up counterattacks and disrupt the enemy's plan for regaining the ground lost to the expanding bridgehead. Once objective two was secured engineer units

could begin the construction of tactical bridges and repair of existing bridges.

Typical artillery targets during the attack on objective two, included bunkers and fortified positions. These targets required the firing of HE projectiles with delay fuzes to penetrate the structures and destroy the position (The delay fuze did not function immediately on impact but allowed the shell to penetrate the structure before detonating). HE fired with a "Pozit" or variable time (VT) fuze achieved maximum effects from the fragments of the projectile against enemy soft vehicles, communications lines, and personnel. The VT fuze functioned at approximately 20 meters height of burst, covering the target area with fragmentation. Smoke was fired to screen the front and flanks to prevent observation of movement and obscure the crossing site. As the assault of the river line continued, planned successive concentrations were shifted and lifted in accordance with the requests from supported unit commanders.

The final phase, the securing of objective three, was achieved by eliminating all of the enemy's indirect fire delivered into the crossing site. The fact that total elimination of all indirect fires into the bridge area was almost impossible was accepted by both the maneuver and artillery commanders. Nevertheless, to be effective the enemy's fires had to be sufficiently accurate, and of such frequency as to halt or seriously interfere with the crossing operation. With friendly fire superiority previously achieved this proved difficult at best. The effects of conventional artillery on raft sites were therefore more of a harassment measure than serious destruction. Also, once installed, a widened steel

bridge could not be seriously damaged by artillery fire unless through a direct hit by heavy caliber cannon. Based on these considerations, the elimination of the enemy's medium artillery was usually considered as meeting this requirement.¹¹

As the attack forced the bridgehead to expand, the displacing artillery was able to move forward and fire deeper and deeper against the enemy. Consequently, in order to survive, enemy artillery displaced further back, moving it out of range of the crossing site. By attacking ammunition supply points, logistical areas, and interdicting major resupply routes, crossing force artillery reduced the enemy's capability of firing on the crossing site itself. Artillery tactics for the attack during phase three were much the same as those used during the advance in phase two. Upon securing objectives one, two, and three the river crossing operation came to an end and the exploitation or breakout phase began as the attack continued.

The second area of doctrine, fire support coordination, centered around liaison elements that were available from battalion through corps level. This included such things as...

"Sending of liaison detachments to infantry battalions and assignment of missions to forward observers. Agreement with supported infantry commanders as to artillery support and signals for shifting fires...(and) any prearranged fires in order to facilitate designation of targets by infantry commanders, liaison officers, and air and artillery observers."¹²

The field artillery was also responsible to coordinate the delivery of all indirect fires and all air to ground fires that were to fall in the zone of the supported unit. In that regard doctrine clearly called for the direct support

battalion to control all close-in fires delivered into the zone of the supported unit. These fires included ordnance from high performance aircraft, bombers, fighter bombers, general support and reinforcing artillery. By delegating the requirement for coordination of all fire support assets to the direct support artillery, the probability of firing on friendly units was greatly reduced. Each direct support unit was therefore required to keep front line locations current and feed this information up the chain of command to the division artillery headquarters. Additional fire support coordination measures were also imposed to control the placing of fires. Graphically these consisted of lines or boundaries on maps and charts that served either to restrict or permit where indirect fires could fall without the approval of a controlling artillery headquarters. By placing these lines in the forward areas of the attack, the fires of high performance aircraft and long range artillery could be employed and not required to go through the slowing process of getting clearance before delivery.

Because the mission of the artillery in a river crossing operation was to protect the infantry and armor, close continuous coordination between commanders was extremely important. As the attack of the river line continued, this coordination became even more critical due to the rapidly changing situation. At this juncture in the operation the artillery commander fought his artillery much the same as the tank and infantry commanders fought their forces. He decided how the field artillery could best fight the battle, and explained his plan to the supported maneuver commander who approved the plan or ordered modifications. The integration of all weapons systems into the maneuver scheme was of utmost

importance to both commanders. The field service regulation, FM 100-5, for 1944 stated that:

... "To insure close cooperation with the attacking troops, artillery units assigned to direct support of designated units maintained constant communication with supported units through common command posts or by liaison agents."¹³

To ensure this cooperation, the main emphasis was usually on common command posts versus liaison officers. Therefore, artillery commanders at each level of command generally followed this guidance and positioned their command posts as close as possible to the supported maneuver command post.¹⁴ This allowed all arms to "aim" at the same goal in a coordinated effort, considerably reducing delays in execution. Lines of communication were significantly reduced allowing rapid installation of wire circuits for command and control. If the separation of these command posts became a necessity, then it was the responsibility of the field artillery commander to establish liaison and communications with his supported unit. By further assigning the field artillery battalions standard tactical missions, adequate control was maintained over the fire support assets available for the river crossing operation.

The definitions provided in Chapter One discussed the tactical missions normally assigned to field artillery units. These missions provided the artillery commander fixed guidance on establishing priority of fires, liaison, communications requirements, ammunition expenditure, and positioning of the firing elements (Appendix Two). The use of these missions significantly contributed to the decentralization of command and

control of artillery and allowed this fire support planning process to function with minimal guidance.

Command and control was closely aligned to fire support coordination. The corps artillery headquarters, centered around the fire direction center (FDC), usually located well forward in the center of the corp's artillery positions. Fire direction centers were organic to each type of artillery battalion and were therefore available from field army level down to the firing battery of the direct support battalion in each division. By using the FDC as the common tie for all artillery units in the corps sector the command and control of artillery fires was instituted into a common type facility that was available across the entire front. The FDC further aided the corps artillery commander in centralizing control of artillery when the tactical mission dictated. An example of this is in river crossing doctrine which called for the control of all forces in the bridgehead area being placed under a single agency.¹⁵ To comply with this the command and control of artillery was placed under a centralized command headquarters. This was normally the corps artillery headquarters or possibly a division artillery headquarters when the river crossing was being conducted on a smaller scale. This headquarters then became responsible for controlling the movement and positioning of artillery units into the bridgehead area, planning and coordinating deep fires to support the objectives of the crossing operation, and monitoring the overall tactical situation to ensure the best possible fire support was being provided to the maneuver units.

Another responsibility of the FDC was the fire direction of its assigned unit. Fire direction was further broken into technical and tactical

fire direction. Technical fire direction, or the mechanical process the FDC used to compute the firing data for the guns, was usually limited to the firing battery or battalion. Tactical fire direction, or the tactical command of one or more artillery units, for the purpose of bringing their fire to bear upon the proper targets at the proper time, was the means used to control the fires of the various artillery units in the corps.¹⁶

The command and control of artillery units in the corps was further aided by the establishment of artillery group headquarters. The primary mission of a field artillery group was to serve as a tactical headquarters for employment of attached battalions. Field artillery groups, by established practice, were composed of units having a common mission. The missions assigned to corps groups were roles of general support, reinforcing, and general support reinforcing the fires of a division with a group, or part of a group.¹⁷ It also exercised tactical fire direction responsibilities.

"The flexibility of the new organization makes it readily possible to form task forces without reorganization of units or disruption of the old fixed regimental organization and at the same time permits a massing of means as required by the situation."¹⁸

The artillery group was often used by the corps artillery commander to employ his resources with the greatest flexibility. The group was also capable of performing as a second corps artillery FDC, as a control headquarters for attached artillery, a direct support unit for a task force, or as a subordinate headquarters for the corps artillery in controlling several battalions with the same mission. As an extremely flexible organization, it

was not uncommon for entire groups to move from division to division or for battalions to move from one group to another. By adding battalions to groups and in turn groups to divisions the command and control of the artillery became more centralized. Throughout the war, groups and nondivisional artillery were shifted from corps to corps. This flexibility became the hallmark of non-divisional artillery.¹⁹ The employment of groups and attached battalions is a good example of adaptability of doctrine to fit the needs of combat.

"The various higher commanders developed their own doctrine on the functions and use of the field artillery groups. Some commanders attempted to retain groups and battalions together while others shifted battalions continuously from one group to another without regard to continuity of command. Regardless of the various individual ideas on proper organization for combat, the flexibility of the field artillery group organization gave commanders the necessary weapon to meet rapid moving and highly mobile warfare." 20

Through the corps artillery FDC, the corps artillery commander received, consolidated, and coordinated division artillery fire plans. These were then expanded based on intelligence information available at the corps headquarters. Through these actions an effective corps artillery fire plan was developed. Once this plan was complete fire missions were then assigned to division artillery, and corps brigades, groups, and battalions. This same procedure was followed at the division level as the division artillery planned the employment of its battalions and batteries. Fires were assigned to division artillery based upon mission and sectors of fire. The corps artillery FDC maintained a detailed location of all field artillery battalions in the corps area and plotted this information on the corps artillery firing chart. By using this technical as well as tactical

information, it was immediately apparent what and how much fire support was available to be delivered into a given area or on a specific target.

"...the ability to mass quickly and accurately the fires of many artillery battalions on a single target was quite frequently responsible for the success of an operation...these fires were carefully controlled and readily shifted to the desired location...these fires were available, on short notice, during all hours of the day and night and in all kinds of weather."²¹

Through this system (when ordered by the corps commander) the fire-power of the division artillery could be used on any target in the corps area. However, with knowledge of the flow of the battle, and which battalions of the division were not being used, the corps artillery commander could direct that their fires be used to reinforce the fires along portions of the front as needed.²² As can be seen, this flexibility allowed the corps artillery commander to exercise influence over divisional battalions with a direct support mission as well as the general support artillery.

It is obvious that liaison, communications, fire plans, and artillery support in general were all dependent upon the organization for combat. Definite considerations, nevertheless, had to be evaluated as to the type of artillery available before finalizing the mission assignment.

As a result field artillery systems were classified by range, mobility, and firepower. Light artillery, usually 105 MM or smaller, was intended for use by the division in combat as their direct support artillery. Less rapidly firing, medium artillery, which included 4.5 inch guns and 155 MM

howitzers, was also less mobile but delivered greater destructive power. Since there was usually only one medium battalion in each division it was normally employed in the counterbattery role. The 155 MM gun, 8 inch howitzer, and 240 MM howitzer were classified as heavy artillery and usually were employed as general support artillery.

It is apparent from studying the afteraction reports of the war that there were almost as many techniques of organizing for combat as there were corp artillery commanders. This could be expected since there was little formalized artillery training at corps level, and as a result corps artillery commanders and staffs worked out the method to organize for combat according to their own ideas.²³ In general this consisted of assigning the standard tactical missions listed in Chapter One or attaching artillery units for the purpose of allowing their fires to be planned and controlled by the supported artillery unit. By using the standard tactical missions responsiveness was increased without interfering with command and control. These missions provided centralized control and decentralized execution of fire support assets. There were no written principles for the commander to use as a guide in organizing for combat. However, a study of the guides used by different corps artillery commanders identifies principles that closely resembles those used today; (1) maximum feasible centralized control, (2) adequate fire support for committed combat units, (3) facilitate future operations, (4) weight the main effort, and (5) provide immediately available fire support for the commander to influence the battle.

While doctrine did not formally address each weapon by type, field artillery units were organized by weapons system because each type was better suited for a particular role. Normally, medium and heavy artillery were best used in counterbattery, while light artillery served best in direct support of forces in contact. Division artillery organization for combat was dependent upon the additional artillery, its disposition, and missions assigned by the corps artillery commander. As a rule, the tables of organization only authorized one battalion of medium artillery in a division. The artillery immediately available to the division was therefore the minimum necessary to provide support when facing weak resistance. This was a common concept for the force development of divisions prior to World War II. The important point in organizing for combat is that corps light and medium battalions habitually reinforced direct support battalions. They were closely tied to the infantry and tanks which made several battalions of artillery available instantly to the direct support battalion.²⁴ The observer assigned to each infantry company was able to mass the fires from two to four battalions in a few minutes. In keeping the divisions "lean", the corps artillery retained the majority of the medium and heavy artillery in groups and provided support to the division artillery through the use of standard tactical missions. As the situation changed, and additional support was required, the corps allocated the assets of its groups by either assigning one of the standard tactical missions or attaching the group to the division. The standard guide for this method of employment was that during rapid moving situations the bulk of non-divisional artillery should be attached to the divisions, whereas when progress is slower or the situation becomes static, attachments were usually limited to one light battalion and one medium battalion per division.

Another example of this adaptability is when the support of 240 MM howitzer and 8" gun units was required for more than one corps, the field artillery brigade, which consisted of all or the largest portion of the heavy artillery available, was given the mission of reinforcing the corps and remained under the control of the army headquarters. This type of employment was especially desirable in support of a broad front during river crossing operations so that well-planned, long range fires could be targeted deep within enemy lines to neutralize and destroy enemy batteries and installations. 25

STANDARD OPERATING PROCEDURES

"Artillerymen of all ranks will testify to the soundness of doctrine as written in our texts and taught at the Field Artillery School. However, these statements should not be construed to mean that combat lessons have not been learned and put to profitable use."26

Prior to III Corps deployment from England in early 1944, the corps artillery had the opportunity to study and analyze the experiences and lessons learned from artillery units in combat in Italy and North Africa. Additionally, the lessons learned from the corps initial engagements on the European continent showed that doctrine and operating procedures developed earlier had to be modified or augmented. III Corps Artillery was attached to XX Corps during its initial assignment to the 12th Army Group during September and October 1944. Since the corps artillery had no combat units and doctrine stated that the artillery was never held in reserve, the staff operated as a backup corps artillery FDC for the XX Corps Artillery. This retention allowed them to gain combat experience and observe procedures

used by other artillery units in the theater without being exposed to significant combat losses. These experiences were further enhanced by the corps role in the Battle of the Bulge during December 1944. The rapid movement of artillery units and dynamic organization for combat would later contribute to the ease with which they were able to assemble artillery units for support of the Rhine River crossing at Remagen.

The doctrine discussed earlier in this chapter described the principles for organizing for combat and allocating the fire power of the corps artillery. While this doctrine established the principles that were the basis for operations, each commander made modifications in order to better support the force.

"The ultimate organization for combat, needless to say, will depend upon the tactical mission, consequently in some situations all or a portion of the heavier types of artillery will be attached to corps, whereas in others, a more effective employment will be obtainable by keeping the bulk under army control."²⁷

While this solution was at variance with the doctrine and opinions of many others, it was used by the First Army throughout operations in Europe with extremely gratifying results. A study of the various army headquarters policies shows that the First Army retained the greatest amount of control of its artillery. By also using the guiding principles of vertical and lateral coordination and cooperation the artillery in First Army always responded with prompt, accurate, and effective support regardless of the unit status or tactical mission.

Another procedure used by III Corps Artillery to rapidly mass available fires within the corps sector in an emergency was the codeword SERENADE. Outlined in Third U.S Army Memorandum 1, dated 22 April 1944, the SERENADE procedure was used by all units in the command.

Requests for SERENADE were normally originated by a forward observer and sent to a battalion FDC. By calling for a SERENADE the observer was indicating that a minimum of three volleys were needed on the target. The battalion FDC forwarded the request to the division artillery FDC where the division artillery commander had the option to transmit the request on to the corps artillery FDC if fires in addition to the division artillery were deemed necessary to defeat the target. The SERENADE was to be fired as a TOT, unless the nature of the target dictated a "When ready" command, so that the fires would begin immediately. The normal time required to coordinate the fires of a SERENADE was from ten to twelve minutes with more time required if additional artillery was used. If the corps artillery FDC felt that the target was of such a nature that the fires of additional artillery units were necessary, they automatically passed the mission to those units not engaged in a more important mission.

The accuracy of the location of a target for SERENADE and the fires placed on the target were the responsibility of commanders at each echelon handling the request. They were responsible to ensure that friendly units were not fired on and that the target warranted the expenditure of such a large amount of ammunition. If there were any questions regarding the accuracy of the target or the actual use of SERENADE, the mission became a

standard adjust fire mission and additional reinforcing fires were used in the fire for effect.²⁸

Experience gained in earlier campaigns had also shown III Corps Artillery that the doctrinal solution to fire support planning was too cumbersome and took too long to accomplish. The procedure described earlier in this chapter normally took fifteen hours and could not possibly be done in less time. Therefore, III Corps Artillery SOP called for the planning to be accomplished simultaneously in the three echelons that had their own intelligence agencies; the direct support battalion, division artillery, and corps artillery fire direction center.²⁹ This called for a mutual understanding and close cooperation of the chain of command, down to and including the direct support battalion commander.³⁰ Fire plans were based on three considerations; requests of division artilleries for thickening fires, counterbattery fires, and fires on targets designated by the corps artillery FDC. This method had the advantage that use could be made of the most recent intelligence information available at the FDC to substitute new targets for those in the original plan. When the fire plan was completed, each artillery echelon ensured that its plan was coordinated with the others and that the fires of one plan were superimposed upon the plan of the next lower echelon.

Additionally, the morale or psychological effect of artillery fire on the supported infantry is an important factor in the infantry attack, especially at the start. Therefore, the preparation and fire plan should carefully consider the effects of concentrated fire of all weapons available in the corps, including heavy calibers. These should fire, especially on

infantry, or vehicles in woods or other assembly areas, with massed artillery in repeated volleys. This is done with the purpose of obtaining, in addition to casualties on material and personnel, the stunning psychological affect which will nullify the enemy's will to resist.³¹

Once these fire plans were allocated, the artillery commander had to be concerned with the procedures used to ensure that the rounds fell where the maneuver commander wanted them. Since scheduled fires were usually unable to keep up with the pace of the assaulting force, a system of "on call" control was usually established. III Corps Artillery took the lessons learned by the 34th Infantry Division in Italy and established a series of phase lines for shifting the fires during each phase of the river crossing operation. Coordination consisted of organizing the artillery, allocating the ammunition, and dividing time to give each echelon the needed support. The SOP called for the allocation of time and ammunition by one-third or one-half. However, it was normal procedure to merely allot an ammunition quantity and agree to the time various units were available to the planning agency.³²

Probably one of the most critical lessons learned from experiences in North Africa and Italy was that the fire support of the corps artillery needed to be as far forward as possible. Selection and coordination of positions for this artillery was a particular problem due to the limited suitable area available and exposed nature of the terrain. Since doctrine established that all artillery units, except the direct support battalion, be positioned by the next higher artillery headquarters, it was traditional for general support artillery to wait for guidance in where to position. III

Corps Artillery decentralized this procedure of displacement by having non-divisional artillery units pull themselves forward instead of being kicked forward by the corps artillery commander. It was the duty of all commanders to request positioning authority from the division artillery controlling the sector and coordinate displacement with the corps artillery FDC. Aided and abetted by the group headquarters, corps artillery was usually in place almost as soon as the division's artillery.³³ Only by repeated staff coordination and joint reconnaissance by corps artillery, group commanders and division artillery commanders was a profitable and equitable distribution and most advantageous position for all types of weapons from 8" howitzer to 105 MM howitzer obtained.³⁴

Battle experiences had further taught III Corps artillery personnel that by assigning additional liaison officers to the armored and infantry divisions as well as cavalry units and adjacent corps, coordination would be significantly improved. As discussed earlier it was First Army policy to coordinate both laterally and vertically. The 9th Infantry Division Artillery solution to this directive was for the medium battalion to provide liaison to the artillery headquarters on the left while the light battalions were responsible for liaison to any attached units. By following this procedure, artillery commanders at all echelons were aware of where everyone was and what was going on at all times.³⁵

This liaison arrangement did not come cheap in that it cost both in manpower and additional communication equipment. Corps artillery accepted the fact that by removing the radios from some of its battalions the SERENADE net would be broken.

"Thus when the corps artillery FDC or division artillery wanted to mass the fires of several battalions by radio, the mission had to be relayed by group commanders through their own wire or radio."³⁶

It was also SOP for the reinforcing unit to send a liaison officer with radio communications to the reinforced unit. It sent at least one observer with radio and wire who reported all targets he identified to the reinforced unit. The reinforced unit then designated whether or not the target would be engaged and the unit that was to fire. The observer then contacted the assigned firing unit by radio. By going to the reinforced unit first, the fires supporting the maneuver sector were closely controlled and the possibility of firing on friendly units was greatly reduced.³⁷

It was corp artillery SOP that general support battalions with no reinforcing mission were prohibited from firing closer than 4,000 yards of the front line without clearance from division artillery. Division artillery further controlled these fires by a series of restrictive fire control measures called "no fire lines", another example of the many types of fire support coordination graphic controls mentioned earlier. This line was established from 500-1,000 yards in front of friendly units and changed with the situation. It allowed artillery fires to be delivered quickly without excessive checking between units for locations of friendly troops. Corps and adjacent artillery units were allowed to fire beyond the line without checking with the division artillery concerned. To fire inside the line corps and adjacent division artillery units had to receive clearance or a request from the division concerned. Unlike the division artillery, corps artillery relied solely on the establishment of clear boundaries between

divisions and did not normally use fire support coordination measures.³⁸ First Army SOP called for the establishment of a line beyond which all artillery could fire at targets of opportunity without clearance. This further decentralized the employment of fire support and sped up the delivery of fires into the zone of the supported unit. Direct support battalions, however, were still responsible for coordinating the close-in fires of all units firing into the zone of the supported unit.

A noticeable weakness in the normal procedure of corps control of heavy artillery was brought to light during the pursuit across France. Quite often heavy artillery was either attached to rapidly moving divisions, out of range, or unable to fire because of the fluid conditions on the front. As a result, quite often lucrative targets resulting from the enemy's disorganized withdrawal could not be fired. The established procedure was that heavy artillery, particularly 155 MM self propelled howitzers in armored divisions, would have necessary communications and authority to work directly with the Tactical Air Command. This procedure of adjusting artillery rounds by observation from high performance aircraft, known as "ARTY R", was to become a very effective means for employing long range fires deep into the battle area. These fighter aircraft did not carry the same stigmatism as observation aircraft and therefore, the enemy did not attempt to hide from their relatively short attack passes. Once the aircraft had delivered its ordnance on the target the pilot could request the fires of artillery units positioned in range. Another benefit of ARTY R was that the plane could remain on station to make adjustments and report back the effects the rounds had on the target. While this procedure was not

taught at the Field Artillery School, it was taught in theater, and was used quite effectively through the war.³⁹

Because of the limited capabilities of communications equipment, III Corps artillery maintained two fire direction centers for control of its fires. For purposes of planning a ten kilometers air line distance was used as the standard length for field wire communications. In order to maintain communications between divisions abreast, one FDC was normally positioned every ten kilometers along the front. Corps almost never occupied a front as narrow as twenty kilometers therefore making the use of the second FDC a necessity.⁴⁰ This distance between FDC could be further reduced by using an artillery group headquarters as a tactical FDC.

As can be seen the role of field artillery in the conduct of the campaign changed substantially between the written doctrine and applied SOP of the III Corps Artillery. The way III Corps Artillery operated had been set by a conscious mixture of doctrine and earlier lessons learned. By exercising great flexibility in maneuvering battalions, utilizing an extensive network of liaisons officers, and establishing clear boundaries between divisions, they overcame the technical burdens of the existing doctrine to spearhead the attack on the Rhine River.

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CHAPTER THREE

This chapter provides an overview of the situation faced by III Corps Artillery at Remagen from 6-20 March 1945. In order to appreciate the nature of the fast developing situation, it is important to first begin by depicting what the corps artillery was doing just prior to Remagen and then describe the scene as the 9th Armored Division's Combat Command B approached the bridge.

The Rhine River had played a significant role in the defensive plans of Germany throughout history. It served to discourage many invaders and would-be conquerors. Prior to World War II, the only successful forced crossing of the Rhine had occurred in 1813 when Napoleon made a crossing during his Russian Campaign. On 28 February 1945, the First US Army issued a plan that called for a three stage drive to the Rhine River. During stage one of the offensive III Corps would seize a line along the Erft River from MODARTH to EUSKIRCHEN. Stage two required the Corps to continue with a strong attack southeast toward the Rhine River. During the final stage, which was to be executed on order, III Corps was to continue the advance to the Rhine River, and along with VII Corps, prepare for further advances to the east.¹

Due to logistical difficulties in moving over VII Corps bridges, III Corps Artillery, which had been active in support of the crossing of the Roer River, had not been able to displace east until 28 February. Despite this delay, III Corps Artillery was thereafter kept well forward and participated

in numerous fire missions to repulse local counterattacks. On 5 March the bridge at BONN was taken under fire by corps artillery units. From 5 March through 7 March the artillery was engaged in continuous displacements behind the rapid drive of the 9th Armored Division.² The diagonal thrust of the Corps, which carried the attacking Americans to the Ahr River, completely deceived the Germans, who retreated to BONN where they expected the main attack.

It is not surprising that the Germans had fully incorporated the river into the defense of the German Homeland.³ Nevertheless, First Army intelligence indicated that the German Army had not had sufficient time to prepare defenses opposite the attacking American Army. The most obvious reason was that the priority for defensive preparations had been focused north to the Ruhr industrial area and North German Plain.

As the Americans continued to attack toward the Rhine, instructions were issued by the Army Commander to the Commanding General III Corps, that advancing units were to take advantage of any favorable opportunity which might arise for seizing a bridgehead across the river. On 6 March, III Corps shifted the objectives of its divisions southeast to conform to the First Army's emphasis on crossing the Ahr River. With this shift, the attack of the corps gained momentum. However, the main effort of the 9th Armored Division remained directed at crossing the Ahr and not the Rhine. Neither the division's nor its spearheading combat command's field order addressed the taking of the bridge at Remagen. It appears that for all the talk, the prospect of taking a bridge over the Rhine was little more than a fancy.⁴

Meanwhile, on the east side of the Rhine the plan for defending the bridge was falling apart. Already contradictory command channels in the German units left to defend the bridges were placed in further disarray as Allied troops pushing toward the Rhine created more and more confusion. This confusion and subsequent contradiction was repeated at almost every level of command.⁵ As the command responsibility for the Remagen bridgehead passed back and forth between the WEHRKREIS (Military districts) and Fifteenth Army's LIII Corps, so, too, did any understanding of the complicated command setup and true nature of the German reserves west of the Rhine. For the small German force defending the bridge at Remagen on 7 March, the situation was hopeless. For several hours frightened and disorganized groups of German troops had been fleeing across the bridge heavily pursued by American forces driving down the Ahr valley. Substantial numbers of supply vehicles, horse-drawn artillery, and other rear echelon service units funneled to the bridge creating a massive traffic jam. Amid the chaos, and rapid withdrawal east, the actual force left to defend the bridge only consisted of a small company of soldiers, a handful of engineers, and a few unreliable VOLKSSSTURM. As Clausewitz wrote:

*"A defended river can be considered as a form of resistance that favors the attacker only if the defender makes the mistake of staking his whole future on this defense."*⁶

For the retreating German Army the Rhine River bridges were key in the defense of the homeland. Even so, the lack of preparation for their defense did appear to favor the attacker and while resistance was stiff

the inevitability of the American crossing appeared to only be a matter of time.

At the same time Combat Command B, consisting of the 27th Armored Infantry Battalion and the 14th Tank Battalion (minus one company), was driving almost unopposed to the steep cliffs on the west bank of the river at Remagen. At noon, as the lead platoon reached the bluffs overlooking the city, the platoon leader was completely surprised to discover that the railroad bridge was still intact. Upon reporting this discovery back to the task force commander, the first orders issued were to immediately get artillery fire on the bridge to hamper the German retreat and prevent them from destroying the structure. As soon as BG Hoge, commander of CCB, arrived at the bluffs and saw the bridge he further ordered the task force commander to:

"grab the bridge, take some tanks and put them on each side of it and fire across the river. Send your infantry across when you establish fire superiority."⁷

The request for support from the artillery was for time and VT fuze HE. However, supporting artillery declined to fire VT fuze projectiles due to a lack of a detailed understanding of the tactical situation and concern of firing on friendly forces.⁸ Since the VT fuze was a relatively new fuze and not completely understood by all levels of command, Corps had issued a directive that required approval from the corps artillery headquarters before it could be used. There was concern that the fuze would function short of the target or at such a high altitude that shell fragments would fall on friendly troops positioned in

the gun-target path. VT fuze could therefore only be fired on targets greater than 1,500 yards in front of friendly troops. There was also a special concern for the effects it would have on aircraft flying in the vicinity of the burst. Guidance issued by army headquarters directed each corps to develop an effective warning system which would permit maximum warning to all observers and aircraft in the area before firing. The plans established to disseminate this warning to all observers authorized the FDC to forbid or restrict VT fires when important air missions were being flown.⁹ While orders had been issued that only time or VT fuzes would be fired on bridges, the use of VT had not been approved for Remagen and the artillery FDC did not know the exact location of all friendly forces and aircraft. The lack of a complete understanding of the battlefield and knowledge of true friendly unit positions therefore denied the attacking force the fire support it needed in the initial assault on the bridge.

On top of the hill, BG Hoge watched the attack across the bridge. As he waited a message was received from III Corps that ordered him to cancel his present mission. Patton had almost broken through to the Rhine and Hoge was to drive south to meet him. Scanning the bridge he saw that the infantry had not yet started to cross. It was not too late to cancel the order to grab the bridge. Hoge hesitated only a second, if he took the bridge at Remagen he would be a hero; if he failed he could lose this command and his career would be ruined. His decision to take the bridge held, to hell with the consequences.¹⁰

In the rapid advance, it had been almost impossible for the supporting artillery, especially medium battalions and corps artillery, to keep pace and remain in range to support. For the artillery it was especially difficult to keep up with the attacking infantry and tanks and at the same time compete for space and priority on the heavily congested roads that flowed into the Remagen area. As a result the only artillery battalion available to provide fire support for the establishment of the initial bridgehead was the 400th Armored Field Artillery Battalion. While the 400th AFA was not a direct support artillery unit it was assigned the mission of reinforcing the 16th Armored Field Artillery Battalion, CCB's direct artillery battalion, and therefore was in position to fire into the zone of support for CCB. As the leading elements crossed the bridge they were closely followed by two forward observers from the 400th AFA. By 1610 hours, 7 March a total of three observers were adjusting the fires of the battalion from the east bank of the Rhine.¹¹

The battalion liaison officer with the command elements of CCB, directed close support artillery fire concentrated on the commanding heights above the east bank of the bridge site. The battalion commander went forward to relay fire missions as the driving columns pressed toward the crossing in order to expand the bridgehead. A first priority became the antiaircraft installations that ringed the crossing site which were the major obstacle to securing the crossing site. Additionally, air observers flying in limited visibility conditions, adjusted artillery rounds beyond and on the flanks of the site to neutralize opposition. During the afternoon, a total of 500 rounds were fired by the battalion

as both air and ground observers adjusted missions on boats, and fleeing enemy columns attempting to cross the bridge.¹²

The lack of immediately available artillery support (only two battalions) reflects the lack of flexibility in the corps' initial plan. Additionally, while it was the responsibility of the direct support artillery of Combat Command B to clear the fires into the zone, it was, in fact, the responsibility of the liaison officer with the leading task force to keep the artillery commander accurately abreast of the situation.

The changes in boundaries and objectives directed by the First Army order and III Corps Directive No. 9 oriented the 9th Armored Division southeast toward the Ahr River, (Appendix Three). With this change, the city of Remagen was placed close to the tentative boundary between the 9th Infantry and 9th Armored Division. This boundary was to become effective on order. Whether this change and the rapidly developing situation had an impact on the decision not to fire on the bridge is not known. However, it does serve to demonstrate the need for decentralized command and control of fire support assets in a rapidly changing situation. While the corps commander had directed that if a bridge became available it should be captured, the artillery, like the rest of the American Army, had simply not anticipated supporting such a crossing and therefore did not address it in the plan of fire support.

When word of the captured bridge was received at the 12th Army Group Headquarters, General Bradley ordered all available forces be sent

across the bridge. III Corps was again presented with a problem of making troops available for immediate employment at the bridgehead. Since the greater part of III Corps' divisions were engaged, an expedient plan to move portions of the divisions to the bridge area as they became available was implemented. Other immediate considerations for III Corps were the need for artillery support, the protection of the bridge against enemy air attacks and sabotage, and the construction of additional bridges. The artillery quickly developed a plan to fire on suspected launch sites along the east bank of the Rhine to prevent saboteur swimmers from entering the water in attempts to destroy the bridge.

To effectively control and provide unity of command for this rapid massing of units from different divisions, it was decided to attach all units initially, as they crossed the river, to Combat Command B, 9th Armored Division. The 9th Armored Division Artillery was placed in control of all artillery units that were to deliver fires into the bridgehead area and ordered to isolate the bridge area with long range fires to prevent enemy reinforcements from arriving.

"Long range artillery was moved well forward to be in position to fire on targets miles across the Rhine and to interdict road junctions on one of the German super-highways."¹³

The field artillery organization for III Corps Artillery and the 9th Armored Division on 7 March was as follows:

III Corps Artillery

211TH FA Group HQ
240TH FA BN (155MM GUN)

General Support

528TH FA BN (155MM GUN)

401ST FA GROUP	General Support
309TH FA BN (155MM HOW)	
254TH FA BN (8" HOW)	

408TH FA GROUP	General Support
259TH FA BN (4.5" GUN)	
742D FA BN (8" HOW)	

9th Armored Division Artillery

16TH Armored FA BN (105MM HOW)	Direct Support CCB
400TH Armored FA BN (105MM HOW)	Reinforcing
3D Armored FA BN (105MM HOW)	Direct Support CCA
73D Armored FA BN (105MM HOW)	Reinforcing
667TH FA BN (155MM HOW)	General Support

In addition to the fires of the corps artillery, the 32d Field Artillery Brigade was placed in general support reinforcing the fires of the III and VII Corps Artillery from positions west of the Rhine. V Corps Artillery was to furnish maximum reinforcing fires as requested by the III Corps Artillery in support of the bridgehead and was to position at least one battery of 155 MM howitzers to prevent, by direct fire downstream, any attack on the Remagen bridge by floating craft. VII Corps Artillery was to maintain suitable amounts of artillery west of the Rhine and north of BONN to accomplish necessary interdiction fire on routes for reinforcement and supply into the bridgehead area.¹⁴

The artillery plans, prior to the capture of the bridge, had called for a gradual turn of the axis of advance to the south. III Corps Artillery's mission was to relieve First Army Artillery, and take over their mission of interdicting SINZIG and Remagen; possible enemy crossing sites. The priority of effort was to be directed on the west

bank of the Rhine River. The plan for interdicting the Remagen area had called for only a limited number of guns and furthermore, corps artillery did not have photomaps of the east bank of the Rhine since operations there were not included in the plan.¹⁵ In fact, when news of the crossing came, the Corps FDC and all battalion command posts were displacing forward. An order was immediately sent by radio to all battalions to proceed to new locations from which they would be able to support the Corps operations east of the Rhine River. The corps and corps artillery were given high priority on artillery, aircraft, and ammunition.

"Few targets appeared, but the corps artillery policy of keeping heavy weapons well forward paid excellent dividends. By the night of 7 March, this corps was able to have one light, two medium and two heavy battalions of artillery, exclusive of the 9th Armored Division Artillery, in firing positions supporting the Remagen bridgehead."¹⁶

The new plan called for the corps artillery to place heavy interdiction fires around the entire bridgehead. Effective control was accomplished by the 9th Armored Division Artillery commander, who coordinated the activities of all artillery in close support of the infantry fighting in the bridge area. With all attachments, this consisted of nine light battalions and three medium battalions of the 9th and 78th Infantry Division Artillery and the 9th Armored Division Artillery. The III Corps Artillery FDC controlled the remainder of the artillery which consisted of a total of eight light battalions, five medium, and eight heavy battalions.

On 8 March, the Army's 32d Field Artillery Brigade was attached to the corps artillery. This artillery brigade consisted of the 79th FA Group Headquarters, the 268th FA Bn (8" GUN) the 551st FA Bn (240MM GUN) and The 552d FA Bn (240MM HOW). The 987th FA Battalion, a 32d FA Brigade battalion which had previously been attached to the 1st Infantry division, was attached to the 408th FA Group. The 401st FA Group received the attachment of the 193d FA Bn (25 PDR) and the 965th FA Bn (155MM HOW). As artillery units continued to displace to provide long range fires beyond the bridgehead, the 9th Armored Division Artillery became involved in the management of the positions available for the supporting artillery and coordinating fires to ensure friendly units were not fired on.

"Realizing that artillery with nothing to support made very little sense, corps artillery was very careful to check with each division concerned as to positions their batteries were going to occupy and the routes they contemplated using to reach these positions, in order to avoid duplication of effort and in order not to hamper division troop movements."¹⁷

Additional fire support attached to the 9th Armored Division Artillery included the 84th FA Battalion (105 MM HOW) which was placed in direct support of the 47th Infantry Regiment. In essence, the 9th Armored Division Artillery was controlling the fires of twelve battalions when it was organized under doctrine to be responsible for the control of a significantly smaller force of no more than six battalions. The principle purpose for the establishment of an artillery group was to simplify control of artillery by allowing it to coordinate fires, observation, and liaison in-order to give the commander flexibility in providing fire

support. The 9th Armored Division Artillery did not have this flexibility at Remagen in that it was heavily involved with all of the tactical tasks and responsibilities for the many battalions under its control.

As the bridgehead was expanding, orders were received from 12th Army Group Headquarters to limit the expansion to 1,000 yards a day. This limit was designed to be just enough to keep the enemy off balance and prevent mining the areas around the bridgehead.¹⁸ Once the corps reached the autobahn, seven miles east of the bridge, it was to hold and await further orders. Thus, almost from the start, the forces expanding the Remagen bridgehead were placed under constraints that would ultimately limit their operational capabilities. As directed by Army Group, III Corps issued Operations Directive No. 10, which established three maneuver objectives known as lines RED, WHITE, and BLUE, (Appendix Four). By seizing Line RED, the objective was to eliminate all effective small arms fire from being delivered on the bridge. When line WHITE was reached, all observed indirect fire would be eliminated; and the seizure of line BLUE would prevent medium artillery fire from being delivered into the bridgehead area.¹⁹ These objectives were established in accordance with the doctrine in Field Manual 100-5 and were identified so that the attacking force could rapidly free the bridge area from the influence of the defending force. By limiting the daily advance the attacking Americans were hampered in achieving these objectives and effectively eliminating resistance.

On 8 March, as the bridgehead expanded, the 7th Armored Division was attached to III Corps and moved into the zone of the 9th Infantry

Division. With this change, the 9th Infantry Division was ordered to cross the Rhine and relieve the 9th Armored Division of control of forces in the bridgehead, thus enabling the more mobile armored division to continue the expansion eastward. The 9th Infantry and 9th Armored Division Artilleries provided close continuous fires while the fires of III Corps Artillery kept all roads leading into the area under constant fire.²⁰ Despite this support enemy artillery activity increased significantly as reserves were still able to move into the area.

At 1300 hours, 8 March, III Corps Artillery ordered FA Groups positioned in the vicinity to lay wire and fire for the 9th Armored Division Artillery. As arrangements were made for this, word was received from the corps artillery executive officer that the corps artillery FDC now had sufficient communications to control the harassing fires of the various artillery groups. However, the 9th Armored Division Artillery continued to control the fire of the 32d FA Brigade, 408th FA Group, and 211th FA Group in support of units east of the river.²¹ As the 78th Infantry Division moved into the area, pending crossing of the river, the division artillery was given the mission of reinforcing the 9th Armored Division. The 9th Armored Division Artillery was to clear areas for these units as they moved into positions to fire that night. Ultimately, by the night of 8 March artillery immediately available for support of the bridgehead consisted of the III Corps Artillery, reinforced by the 1st Infantry Division Artillery and VII Corps Artillery, which was charged with responsibility for long range harassing, interdiction and counterbattery fires north of the bridgehead. The 2d Infantry Division

Artillery, with attachments from V Corps Artillery, had similar responsibilities in the south.

On the morning of 9 March, as enemy resistance stiffened, the 9th Infantry Division moved into position and assumed control of all operations east of the river. However, since the 9th Infantry Division Artillery was not yet in position to control the artillery, it was agreed that the 9th Armored Division Artillery would continue to support the bridgehead until the 9th Infantry Division Artillery was able to assume control. When the changeover occurred the 9th Armored Division Artillery would revert to reinforcing the fires of the 9th Infantry Division Artillery. Since the III Corps Artillery was moving, the 9th Armored Division Artillery was once again given the mission of controlling all the fires in the bridgehead area.²²

As the 4th Armored Division moved up to cover the southern flank of the division, the 3d and 73d FA Battalions were made available. Both of these battalions were moved to provide better support to the bridgehead and placed in general support of the division artillery. Additionally, the 19th Tank Battalion was attached to the division artillery to perform its secondary mission of indirect fire. This battalion attached to the 3d FA Battalion along with the 73d FA Battalion, formed a groupment that moved closer to the river to provide fire beyond the bridge area. At approximately 1915 hours, 9 March, the control of all fires in the bridgehead area was finally passed to the 9th Infantry Division Artillery and the 9th Armored Division Artillery reverted to a reinforcing role as planned. At approximately 2300 hours,

the 2d Tank Battalion was attached to the 9th Armored Division Artillery for the secondary mission of indirect fire. The division artillery commander ordered the 2d Tank Battalion to function as an artillery group and be prepared to fire by 1200 hours 10 March. The field artillery organization for combat 10 March was:

III Corps Artillery

32D FA BRIGADE

GENERAL SUPPORT

79TH FA GROUP

268TH FA BN (8" GUN)
551ST FA BN (240MM HOW)
552D FA BN (240MM HOW)

211TH FA GROUP

240TH FA BN (155MM GUN)
528TH FA BN (155MM GUN)

401ST FA GROUP

GENERAL SUPPORT

264TH FA BN (8" HOW)
552D FA BN (240MM HOW)
809TH FA BN (155MM HOW)
965TH FA BN (155MM HOW)
193D FA BN (25 PDR)

408TH FA GROUP

GENERAL SUPPORT

259TH FA BN (4.5" GUN)
742D FA BN (8" HOW)
987TH FA BN (155MM GUN SP)

9TH INFANTRY DIVISION ARTILLERY

26TH FA BN (105MM HOW)
34TH FA BN (155MM HOW)
60TH FA BN (105MM HOW)
84TH FA BN (105MM HOW)

9TH ARMORED DIVISION ARTILLERY

REINFORCING 9TH ID ARTY

400TH ARMORED FA BN (105MM HOW)
186TH FA BN (105MM HOW)
16TH FA BN (105MM HOW)
667TH FA BN (105MM HOW)

3D ARMORED FA BN (105MM HOW) FA GROUPMENT
73D ARMORED FA BN (105MM HOW)
19TH TANK BATTALION (Secondary Mission of Indirect Fire)

2D TANK BATTALION ARTILLERY GROUP MISSION
(Secondary Mission of Indirect Fire)

During the period of the actions just described, enemy resistance increased, as well as artillery fire particularly of a harrassing and counterbattery nature. The rate of enemy fire throughout the corps zone was twenty rounds of light and six to ten rounds of medium artillery per hour.²³

As night fell on 10 March, the advance had proceeded beyond the first phase objective, line RED, and was approximately five miles north of the bridge.²⁴ Wire communications in the area continued to be a significant problem due to the great volume of enemy artillery fire falling on the bridge. The discovery of a German officer operating a radio from a building overlooking the bridge led intelligence sources to believe that other enemy agents were also still in the town directing artillery fire.²⁵ The commander of the 9th Armored Division was instructed to continue the attack to seize line WHITE. As of yet, American artillery had not displaced east of the Rhine. Except for an occasional battery that may have moved with a supported unit, the majority of the corps artillery continued to support the bridgehead from positions on the west side.

Although a moderate amount of artillery fire fell almost constantly on the bridge, it failed to halt traffic for any period longer

than one half an hour. Since German artillery units had retreated across the Rhine ahead of the infantry and tanks, a number of them had reached the east bank in fair shape, particularly those which had been a little further north where the advance of VII Corps had shoved them across the river before the III Corps captured the bridge at Remagen. When the Germans committed a VOLKS ARTILLERY Corps from the north, the total number of German tubes available in the area was approximately fifty 150 MM howitzers and a dozen 210 MM pieces. Considering the importance of the target, the volume of artillery shelling at the bridge crossing was remarkably light. Evidently a critical shortage of ammunition played a greater roll than a shortage of tubes in reducing the amount of indirect fire the Germans could deliver upon the expanding bridgehead.²⁶ Despite all of this, the rate of fire during the morning and night of 10 March was estimated to be two rounds per minute.²⁷ After this, the rate of fires falling in the bridge area would decrease to an estimated four or five rounds per hour. Due to the availability of enemy observers the accuracy of this fire was impressive. Logically, both the railroad bridge and the newly constructed treadway bridge received continuous attention from the German artillery. Work on the bridges was interrupted several times, and artillery rounds punctured pontoons causing delays brought on by frequent repairs.

On the American side, during this period, the corps artillery commander had to exert considerable pressure to establish a corps ammunition supply point (ASP) forward at STADT MECHENHEIM which was only about 12 kilometers to the rear of the artillery. Nevertheless, his efforts were rewarded and as a result of having the ASP so close to the

front, corps artillery was able to have virtually every type and caliber of ammunition available when needed.²⁸

From almost the start, General Hodges, Commander of First Army, was not satisfied with the progress of the expansion of the bridgehead. Even after the order was passed down from General Eisenhower to limit the advance, Hodges continued to chafe at what he considered uninspired attacks that failed to push far enough east to relieve the bridge site of observed enemy artillery fire (line WHITE). While the advances in the bridgehead only averaged about one thousand yards a day, General Hodges was convinced that this was less a reflection of the German strength than the American tenacity.²⁹ The attack to enlarge the bridgehead on 11 March continued to disappoint the American commander.

On 12 March artillery TOT and harrassing concentrations continued to attack the resisting enemy as an assortment of German reinforcement divisions fought stubbornly to retard the expanding bridgehead. Intelligence also reported that elements of the 11th Panzer Division were counterattacking the bridgehead. Nevertheless, artillery activity decreased as the American forces gained the commanding ground around the bridgesite and reduced the availability of sites for enemy observers. The attack to achieve line WHITE had taken five days and had subjected the attacking American army to continued harrassment by observed fires from German artillery. Finally during the night 11-12 March a marked reduction in the amount of enemy artillery fire falling on the bridge was reported. The Corps Artillery commander, BG P.V. Kane expressed a belief that it might have been one or a combination of these factors:

"(1) the heavy interdiction fires fired by Corps for the past several days and nights had made ammunition supply impossible; (2) the enemy was displacing his artillery to the east; (3) the counterbattery program fired by Corps had caused serious losses to the enemy or; (4) his loss of observation, occasioned by the advance of the 99th Infantry Division to the southeast, had made accurate firing impossible."³⁰

On 13 March the 400th Armored FA Battalion fired a total of 2134 rounds while reinforcing the 16th Armored FA Battalion. Beginning with a concentrated preparation fired early in the morning, the battalion continued to fire a heavy schedule of fires throughout the day. At the request of the supported unit, the majority of these missions were battalion mass and TOT to break the enemy assembling for potential counterattacks. In the northern sector of the advance an estimated 2100 rounds of enemy artillery fell. At one time a plan was contemplated to cross six battalions of artillery to the east side to better support the now well-established bridgehead.

At 0830 hours, 14 March, the 400th Armored FA Battalion was ordered to displace east of the Rhine and continue reinforcing the fires of 16th Armored FA Battalion. By 1240 hours all firing batteries had closed and were laid, ready to fire. Seven days after the initial capture of the bridge, the first artillery units were being displaced east to support the ongoing attack. While counterattacks were fewer in number and smaller in size than during the past several days resistance was reported as still being stiff. The central sector reported a decline in small arms fire although artillery and mortar fire was particularly

heavy. In the north opposition became heavy during the afternoon while in the south, where the going was tough due to the terrain, the action was reported as moderate (due to artillery fire). One counterattack of about forty to fifty enemy was broken up by the fire of friendly artillery.³¹

By 16 March when troops of the 78th Division cut the Ruhr-Frankfurt autobahn, expansion of the bridgehead had proceeded to a point where artillery could no longer support the attack from the west bank of the Rhine. A message received from First Army Headquarters directed the 32d FA Brigade with the 79th FA Group Headquarters and 268th FA, 551st FA, and 552d FA Battalions be relieved from attachment to III Corps. What remained of the corps artillery continued to fire a heavy schedule of interdiction and counterbattery missions while the division artillery battalions provided close support to the attacking maneuver forces.

West of the Rhine the 9th Armored and 7th Armored Division continued to guard the river line and defend against enemy attempts to destroy the bridge. This effort had now resorted to the desperate use of saboteur swimmers and even "V bombs". On 17 March disaster overtook the bridge as it collapsed without warning. Concern for the security of the area prompted III Corps Artillery to impose a no fire line between the III and VI Corps. The purpose of the line was to guard against unidentified river traffic and gave each corps responsibility for fires on its side of the line.³²

By 18 March, a total of 18 field artillery battalions were east of the Rhine.³³ Corps artillery continued to support with counterbattery, neutralization, and interdiction fires. Additionally, a final counter-battery preparation was fired as more batteries displaced east across the river. On 20 March, as III Corps continued to attack and seize the objective of the day, the exploitation of the bridgehead came to an end. From the original corps mission to secure crossings over the Ahr River the mission had been changed to cross the Rhine at Remagen and on into Germany. While limitations had been placed on the exploitation of the bridgehead III Corps had continued to spearhead the First U.S. Army drive. In two weeks of hard fighting the Corps had pushed the retreating German Army east to cut the major autobahns, and now was in position for the final thrust into the homeland. Practically none of the essentials for a successful river crossing had existed at the time the bridge was seized. Yet the exploitation of the bridgehead had presented a golden opportunity that justified taking great risks.

LTC Van Valkenburgh, the corps artillery executive officer, attributed the overall success of III Corps Artillery's mission in supporting the Remagen bridgehead to two things; the efficiency of Group Commanders and an excellent communications net.³⁴ The operation had demonstrated an application of the doctrine of flexibility in plans and operations. Perhaps most important, the operation demonstrated confidence in the superior commanders. Throughout the drive all commanders had committed their units to the mission and had not waited for confirmation or approval from the next higher headquarters.³⁵

"It is of interest to note that the treadway bridge completed on 10 March 1945 was the first tactical bridge to be built over the Rhine River since Napoleon performed the same feat. An interesting coincidence is that Caesar made his first Rhine crossing in 55 BC in the vicinity of Andernach. Two thousand years later, in 1945, the American crossing was made 12 miles north of the Roman crossing site." 36

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CHAPTER FOUR

As stated in Chapter One, the purpose of this chapter is to analyze the fire support doctrine employed by the US Army Field Artillery during World War II river crossing operations at Remagen, Germany. This chapter will compare, contrast, and analyze fire support doctrine, unit standing operating procedures, and unit actions as they actually occurred at Remagen.

As previously stated, the crossing of the Rhine River at Remagen on 7 March 1945 was a direct result of BG Hoge's initiative to capitalize on a given opportunity and in essence disobey his orders to secure crossings over the Ahr River. Most accounts leave the impression that the operations staff of the Supreme Allied Headquarters would have avoided Remagen.

The seizure of the Remagen bridge generated several challenges for the First Army staff. Because the Ahr River was pinpointed as the primary objective, III Corps Artillery had not developed a plan for supporting a crossing of the Rhine River. Detailed procedures describing the fire support requirements for river crossing operations existed in both published field artillery doctrine and the various unit standing operating procedures. However, immediate plans needed to be formulated to pursue the new mission. The high level staff faced these immediate questions: would the exploitation of the bridge at Remagen

support the overall Allied thrust into Germany? Would First Army provide necessary support to the force once the river had been crossed? Would a force on the east side of the Rhine be cut off and destroyed by possible enemy counterattacks? In addition, since the corps was "on the move", there was a distinct lack of the centralized control necessary to mass units and exploit a bridgehead. All of these elements combined to make a successful crossing at Remagen seem to be an almost impossible endeavor. BG Hoge's spontaneous decision to attack the bridge provided ample opportunity for the inner "networking" of artillery SOP and doctrine to come to fruition.

Once the decision to cross at Remagen was made, III Corps artillery rapidly moved to position units to support the expanding bridgehead. After all, the flexibility of formal doctrine made it possible for the artillery to quickly adjust to the new situation and mass significant fire support elements to fire into the bridge area. However, it appears that First Army and III Corps Artillery once again ignored the need to have long range artillery well forward as they had previously in the drive across France. This shortcoming was further hampered by the limited road network in the 9th Armored Division area. The roads into the Remagen area were heavily congested with infantry and tanks. Lower priority field artillery units were not free to move resulting in their inability to be in position to support the initial crossings of the bridge. A rapid restructuring of the field artillery organization for combat was necessary to get available artillery units into position to support the bridgehead.

When the order to support the bridgehead was given, the artillery commanders had to immediately implement the existing SOP to support this aggressive mission. Their primary guidance was in the principles depicted in the chart of tactical tasks and responsibilities for control of artillery (Appendix Two) which established the common standard for the employment of all fire support elements. By applying these principles, along with the criteria for organizing for combat, the artillery commander was able to assign standard tactical missions to the units in his command. As a result, all battalions began operations from a common reference point. In that all units had a thorough understanding of the inherent responsibilities of the standard tactical missions, these functions occurred automatically, almost as a matter of habit. This common understanding certainly enhanced the ability of units to quickly transfer from one command to another. Additionally, these transfers were made with only the smallest of adjustments necessary in tactical and technical procedures, thereby allowing artillery to quickly mass and fire on targets.¹

The application of this doctrine was by no means constricting. In fact, commanders became restricted only when they chose to ignore the doctrine. The standardization developed by doctrine allowed the flexibility that was demonstrated throughout III Corps Artillery in the battle. This flexibility was in fact evident throughout the First Army, and continued to be reported upon and passed on by Army Ground Observers in the form of "lessons learned." By allowing each artillery commander to develop and use his own preference in organizing the artillery for the employment and those standard operating procedures

necessary to augment the doctrine, flexibility was improved, while still complying with the general principles of the doctrine itself.

By using the standard tactical missions each artillery commander possessed a span of control that ranged from complete decentralization to centralized control under the corps or division artillery FDC. The span of control employed at Remagen had a significant impact on the artillery's ability to effectively provide support to the maneuver force in the attack to secure the objectives of the bridgehead. Contemporary artillery doctrine called for decentralized control of fire support assets when on the march, when traversing difficult terrain, or when communications did not exist throughout the command.² Therefore, in the rush to seize crossings over the Ahr, and later the Rhine, the field artillery was organized with the majority of the units under a decentralized form of control. However, as the situation at the Remagen bridge developed and III Corps Artillery received additional field artillery units from First Army, a shift to a more centralized means of control was required. Centralized control was further required as adjacent corps allocated artillery fires to support the flanks of the bridgehead. This change in control also supported the principle of giving the force commander sufficient artillery to mass as the situation dictates.

To better understand how doctrine and standing operating procedures were applied at Remagen, the following lessons learned are analyzed:

LESSON ONE: Centralized command and control of field artillery should be held by the headquarters that is best organized to control large numbers of units. World War II doctrine did not favor attachment of artillery groups to divisions as a method of organizing for combat. While attachment is a "status" that makes artillery fires readily available to the supported unit, control of the artillery is taken away from the parent headquarters while additional requirements are placed on the supported unit. During the XVI Corps offensive across the Rhine River, the corps artillery retained control of 34 battalions of artillery while only attaching a total of eight battalions to three divisions.³ Thus, command and control of the field artillery was accomplished through assigning standard tactical missions. These missions also dictated responsibilities for the various commanders while allowing them some flexibility for rapid execution. Therefore, each Division Artillery commander was responsible for a small manageable force that had the primary mission of fighting the close-in battle, while the bulk of the fire support, centralized under corps artillery, was available for the divisions to use against deeper targets. This doctrinal procedure is further emphasized by Col John Burns in a 1943 article in the Field Artillery Journal that stated the only time the control of corps artillery should be decentralized was when forced to because of interrupted communications.⁴ When MG Millikin passed control of all maneuver forces in the bridge area to the Commander 9th Armored Division, III Corps Artillery passed the control of all artillery to the 9th Armored Division Artillery. By further assigning the 9th and 78th Infantry Division Artillery the mission to reinforce 9th Armored Division Artillery, the responsibility to position units and plan fires for all of

the artillery in these three divisions fell on the 9th Armored Division Artillery. This shift placed the control of more than twelve battalions of artillery under a single division artillery headquarters which soon became overburdened with coordinating the tasks and responsibilities established by doctrine. The fact that the various groups and corps artillery FDCs were not efficiently used to control fire support created an avoidable breakdown in the flexibility of the doctrine. While the information available does not point out exactly what role the Field Artillery Group Headquarters had at Remagen, the after action reports of the 9th Armored Division Artillery and III Corps Artillery explicitly state that the control of fires and positioning authority belonged to the 9th Armored Division.

"... However, 9th Armored Division Artillery continued to fire the 32d FA Brigade, 408th Gp, and 211th Gp in support of the units beyond the river. General Kane also directed that in as much as the 78th Inf Div Arty was moving in the vicinity of the river, pending crossing of that Division, it would be given the mission of reinforcing the fires of 9th Armd Div Arty, and that Div Arty was to obtain clearance and assign position areas to that unit."⁵

An analysis of the standard tactical missions illustrates that by leaving non-divisional artillery under the control of corps artillery and assigning missions of general support or general support reinforcing, fire support would have been available to the 9th Armored Division Artillery while relieving the division artillery of the burden of having to control the positioning and fire planning of the additional units. This example of organizing for combat depicts a situation where decentralized control of fire support assets overworked some

headquarters, while others, with the ability to control fires and assist in managing the field artillery battle, were not used efficiently. One of the most significant lessons learned from this study is that commanders should resist the temptation to decentralize control when conditions may warrant otherwise. While unanticipated opportunities that arise may require short term flexibility, this is gained only at the expense of effectiveness and responsiveness.

LESSON TWO: Published doctrine and SOP are useless unless leaders develop and execute plans that are in accordance with the principles established and practiced. River crossing doctrine in U.S. Army Field Manual 100-5, Operations, dated June 1944, prescribed the establishment of three objectives for maneuver forces in order to establish and expand the bridgehead. These objectives were designed to: first, eliminate small arms fire into the bridge site; second, eliminate observed indirect fire onto the bridges, and third; eliminate all indirect fire into the crossing area. The immediate purpose was to advance quickly and establish a bridgehead that would protect the crossing of the remainder of the command. To accomplish this, field artillery doctrine for supporting river crossings described how to attack the objectives established by the maneuver commander. While direct support and reinforcing artillery fired close in to destroy or neutralize enemy positions, general support artillery fired deep to disrupt reinforcements and counterattacks. The three objectives designated by III Corps at Remagen (RED, WHITE, and BLUE) were established in accordance with doctrine. Line RED was quickly taken by securing the bridge and capturing enemy troops occupying a tunnel on the east side of the bridge

Line WHITE proved to be more difficult than expected. When 12th Army Group imposed a 1,000 yard per day limit of advance, III Corps became bogged down and could not obtain the key terrain that enemy observers occupied. This limitation delayed the attacking forces of III Corps from quickly securing Line WHITE. Therefore, corps artillery was required to place excessive artillery fire on the enemy controlled observation posts in an attempt to displace the observers and eliminate accurate enemy indirect fire. While Line WHITE was taken on 12 March, this was 5 days after the initial capture of the bridge. Artillery that should have been used on deeper targets such as artillery batteries, reinforcements, and counterattacks was used in the close-in battle. In essence, the zone of fire for general support artillery, as outlined by doctrine, was modified to provide more artillery for the close-in battle. By increasing the number of units that could fire in support of the close-in battle, the direct support battalion responsible for the zone was forced to clear and authorize the fires of additional units. This required more coordination from the direct support level and slowed the responsiveness of the artillery. By placing limits on achieving the assigned objectives, the flexibility of the doctrine was restricted and friendly units were exposed to excessive punishment by enemy artillery.

The failure to consider the river crossing as a means of achieving the objective and not the end in itself further depicts a disregard for published doctrine. The Allied plan for crossing the Rhine said that it was to have been a "special operation" requiring a significant massing of forces and equipment on the west side of the river before the crossing was to occur. This crossing operation was to have been the objective

and a tremendous amount of men and material were being marshalled in the British sector to accomplish the mission. When the opportunity to capture a bridge intact presented itself to the 9th Armored Division, the special operations mindset was a hard one to break. The initiative of BG Hoge in seizing the Ludendorf bridge presented an opportunity that was in conflict with the published plan and therefore difficult for the Army to shift and support as the main effort. This unwillingness of the Army to make Remagen the main effort of the theater restricted the 9th Armored Division, and later the 9th Infantry Division, in securing the objectives of the river line.

LESSON THREE: Field Artillery units should avoid the tendency to establish standing operating procedures that violate or contradict published doctrine. The fast changing situations that developed throughout World War II, and Remagen in particular, attest to the necessity of having all organizations fighting from a common set of principles. Given the doctrinal principle that field artillery is never held in reserve, units were moved throughout the theater. The necessity of having a common reference point that standardized technical and tactical procedures made the shifting of units from corps, divisions, and groups an elementary task that required little if any change in operational procedures.

LESSON FOUR: Liaison between field artillery units and the supported infantry, armor, and cavalry played a significant role in the ability of field artillery to deliver accurate and timely fires at Remagen. Battle experiences taught artillery commanders that liaison activities,

In addition to that prescribed by doctrine, were necessary to effect the coordination required under rapidly developing battlefield conditions. As discussed in Chapter Two, field artillery commanders from Army level down to Division had implemented policies requiring liaison officers not only to be placed routinely at maneuver units, but with supported artillery units, adjacent units, and at higher headquarters as well. The minimum requirements for liaison were based on the standard tactical missions and are depicted in the tactical tasks and responsibilities for control of artillery (Appendix Two). Commanders quickly learned that in order to be fully aware of what was occurring on the widefront maneuver oriented battlefield of World War II, that liaison requirements prescribed by doctrine would have to be expanded. In the after action report for the Remagen crossing, the commander of the 3d Armored FA Battalion commented:

"The absolute necessity for three additional liaison-observer sections consisting of one liaison officer and two observers with required vehicles, personnel, and communications equipment was again clearly demonstrated."⁶

The fact that sufficient liaison had been established and that the policies implemented were adhered to is evident in the comments of General Board Study No. 61, Field Artillery Operations. This board also called for additional liaison officers in order to improve habitual relations and greatly improve overall efficiency.⁷

Several of the lessons learned from World War II appear to have escaped the planners of today's field artillery units as liaison elements

have completely been removed from the authorized tables of organization and allowances (TOE) for divisional direct support and general support artillery battalions. While the Fire Support Officer (FSO) and Fire Support Team (FIST) have evolved to perform the duties of liaison with the supported maneuver force, the liaison sections required for coordination with supported artillery units, other field artillery units in zone, or lateral and vertical coordination as required by First Army have been removed from the TOE. Divisional FA battalions no longer have an authorized liaison element to execute coordination of fire plans, do the planning for road movement priority and positioning of units, or other activities that are required to efficiently support the maneuver force. Admittedly, field artillery technological advances such as the Tactical Fire Direction Computer (TACFIRE) and Battery Computer Sysytem (BCS) allow artillery units to communicate and pass hard copy messages, fire plans, and other such information in a matter of seconds. However, this mandates that all units be using the same codes, and possess the same equipment capabilities. Also, these systems are used only by the US Army and are not common in other NATO countries. While these advances have increased the responsiveness of the US Army's field artillery, they have done so at the expense of manpower. Those tasks that can only be accomplished by the persistent and knowledgeable efforts of a liaison officer can not be performed by a computer.

This manpower drain has further evolved as a result of maneuver commanders developing a more thorough understanding of the field artillery's role in combined arms operations. Their increased knowledge of field artillery capabilities no longer requires a "Redleg" at each

headquarters to tell commanders what the artillery can do. However, the liaison officer has other duties such as keeping abreast of the artillery organization for combat, ranges and rates of fire of weapons, ammunition types and availability, and other technical information that will aid the commander in fighting the battle. The lessons of the artillery in World War II are clear. The requirement for liaison still exists and is demonstrated repeatedly in field exercises. The field artillery should not remove all liaison officers in a blanket effort to reduce manpower.

LESSON FIVE: The principle that reinforcing field artillery has the same zone of fire as the reinforced unit provides significant flexibility to the artillery. However, with this requirement comes the implied task that the supporting artillery must position so that it can fire into the zone. The necessity of this task is probably no more evident than the example of the 400th Armored Field Artillery Battalion at Remagen. Since the 400th AFA was assigned the mission of reinforcing the 16th Armored FA Battalion, it was following the advance of the supported maneuver command, CCB, 9th Armored division. The pace of the advance and the congestion on available roads precluded the direct support battalion from moving to positions to support CCB as it made the rapid drive to capture the Ludendorf railroad bridge. However, the 400th AFA was close by and in its reinforcing mission positioned itself to quickly answer calls for fire directly from the forward observers of the 16th AFA versus the liaison officer. Compliance with this principle resulted in the continued availability of fire support until the direct support unit could move to closer positions. However, by answering calls for fire not

cleared by the 16th AFA, the 400th AFA violated doctrine. This example of initiative, and decisive action by the commander provided fire support to the attack that played a significant role in the successful securing of the bridgehead. On today's airland battlefield, the field artillery can not afford to be completely taken out of the battle. By establishing dual zones of responsibility, artillery units have freedom to displace in order to survive without halting fire support of maneuver forces in contact. The initiative and aggressive actions displayed by commanders at all levels further enhanced the application of this mutual support.

LESSON SIX: Field artillery units should practice several tactical missions. The field artillery units that moved into the Remagen area to support the bridgehead were required to quickly change from one standard tactical mission to another. They had practiced this repeatedly in the drive across France and as a result were able to do it both quickly and efficiently. In sharp contrast, the habitual relationships assigned today's field artillery units almost institutionalizes the assignment of one tactical mission. This is particularly true of direct support artillery. All artillery units should be aware of the tasks and responsibilities required for the control of artillery. Due to the limited number of field artillery assets now available, the ability to change missions rapidly while being thoroughly aware of the fire support tasks and responsibilities required is even more critical. The ability of the field artillery in World War II to rapidly change supporting roles without a degradation of capabilities became the hallmark of the flexibility of artillery doctrine. The artillery of today should not lose this capability.

The research conducted for this study uncovered two other areas that warrant further exploration. The command and control of field artillery during World War II should be studied more closely from a doctrinal perspective. Campaigns such as the Battle of the Bulge and Remagen saw significant artillery forces massing to support the advancing US Army. At Remagen no less than thirty-three field artillery battalions were providing support for the 9th Armored Division and the expanding bridgehead. The field artillery doctrine called for maximum feasible centralized control. While the Field Artillery Group headquarters aided the corps artillery commander in establishing this control, the corps artillery FDC still served as the central command facility. The problems encountered when trying to control such a large organization were significant and remain so today even with computers and improved communications equipment. In field training exercises conducted today, artillery commanders control limited numbers of actual units while notional units fill the remainder of the organization for combat. The techniques developed for fire plan coordination and control, ammunition resupply, positioning, and target acquisition are just a few of the areas that could be examined to provide insight into how these large organizations fought so successfully. Valuable lessons, therefore, can be learned in the study of how the World War II corps artillery augmented the firepower of its subordinate divisions.

The second area that warrants further examination is the field artillery's role in the use of pilots of high performance aircraft for the adjustment of indirect fires. The use of fighters and fighter bombers for adjustment of artillery fires was developed in the European theater

and these aircraft enjoyed considerable success in calling for and adjusting artillery support on enemy targets that they themselves had not attacked. On today's battlefield, high performance aircraft are being used to target deep battle formations and fire weapons such as the Multiple Launch Rocket System (MLRS).

Artillery doctrine for support of river crossing operations prescribed firing on specific targets in support of a maneuver scheme. Compliance with these missions, while adhering to the tasks and responsibilities for control of field artillery, allowed the commander considerable flexibility. The doctrine placed all field artillery units on a common heading. Considering the vast changes of mission, organization for combat, and fast pace of the move across Europe, the artillery's success during World War II was aided by the existence of flexible yet formal published doctrine. The fine points of this same doctrine has several significant implications for use today and therefore should not be ignored as being antiquated. In future wars, the field artillery community will not have the luxury of studying the lessons learned from the initial combat encounters. As historian Russell F. Weigley so clearly stated in the epilogue of his book, Eisenhower's Lieutenants,

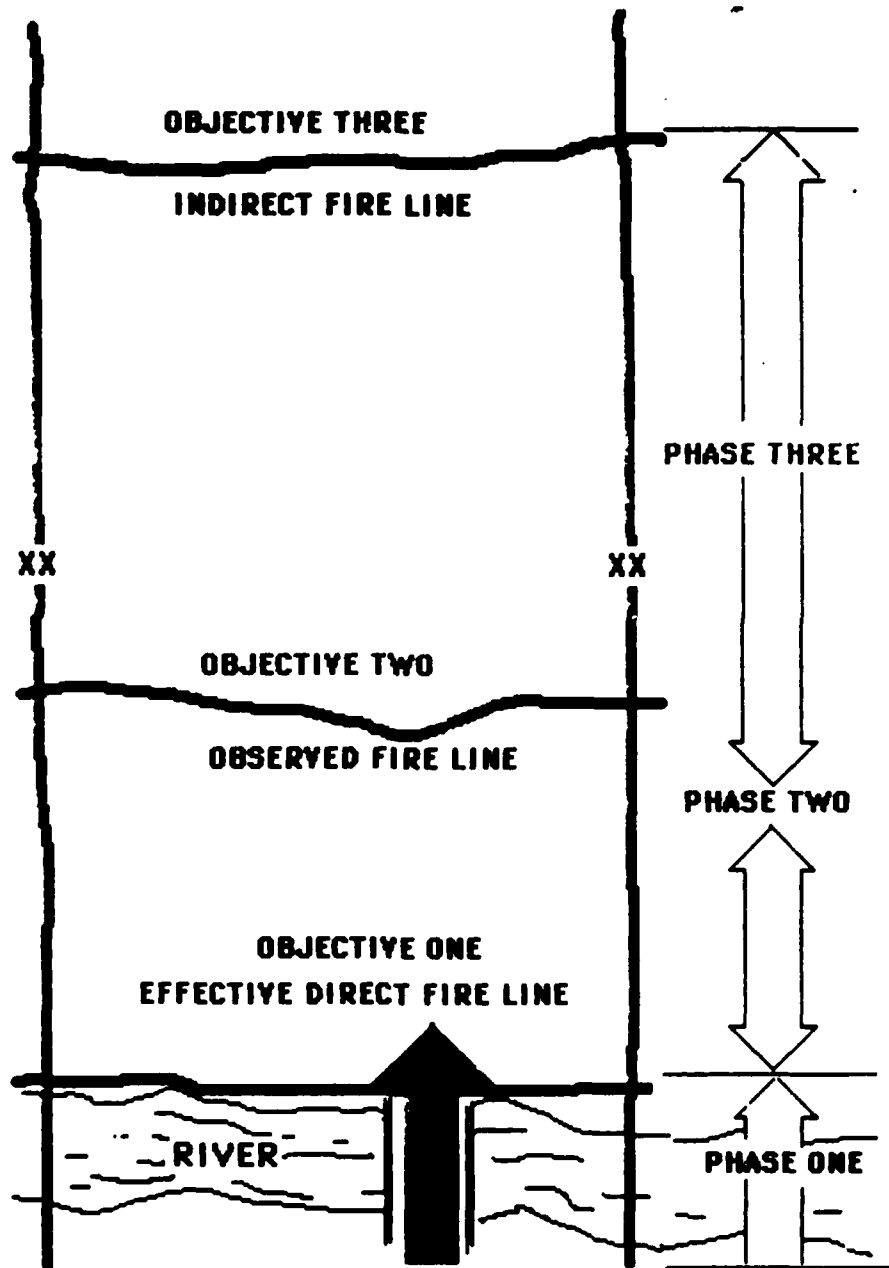
"...we cannot afford a complacency drawn in part from past military victories, at least one of which --the victory in Europe in World War II--was more expensive and more often postponed than it might have been because American military skills were not as formidable as they could have been."⁸

The field artillery of today should therefore heed the lessons from its successful World War I predecessor. The development of standardized tasks under a set of simple, clear, fully understood doctrinal procedures will allow the flexibility necessary to execute the tenets of modern Airland Battle Doctrine. By having this common point of departure for all field artillery units in theater, commanders will be able to demonstrate the Agility, Initiative, Depth, and Synchronization required to fight on a fast paced battlefield.

CHAPTER FOUR ENDNOTES

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3. U.S. Army Ground Forces Report, Corps Artillery, Organization and Employment, Washington, D.C., 18 May 1945, p. 24.
4. John J. Burns, Col, "The Employment of Corps Artillery," Field Artillery Journal, March 1943, p. 289.
5. 9th Armored Division Artillery, After Action Report, Feb- March 1945, 8 April 1945, p. 3.
6. 3d Armored Field Artillery Battalion, After Action Report, March 1945, p. 4.
7. U.S. Army, General Board No. 61, FA Operations, undated, p. 107.
8. Russell F. Weigley, Eisenhower's Lieutenants, (Bloomington, Indiana: Indiana University Press, 1981), p. 730.

APPENDIX ONE



PHASES AND OBJECTIVES OF A RIVER CROSSING

APPENDIX TWO

Direct Support	<ul style="list-style-type: none"> * First Priority to supported infantry/tank battalion * As required by higher HQ 	<ul style="list-style-type: none"> * HQ of the Supported Unit 	<ul style="list-style-type: none"> * Supported Unit HQ * Higher HQ 	<ul style="list-style-type: none"> * One to each Company or similar unit of the supported Bn 	<ul style="list-style-type: none"> * DS Artillery, Bn Cdr or Div Arty Cdr as required 	<ul style="list-style-type: none"> * Zone of action of the supported unit 	<ul style="list-style-type: none"> * Plan own Fires * AS directed by higher HQ
General Support	<ul style="list-style-type: none"> * Force as a whole * In priority as assigned by higher HQ 	<ul style="list-style-type: none"> * As directed by Higher HQ 	<ul style="list-style-type: none"> * Next Higher HQ 	<ul style="list-style-type: none"> * NO REQUIREMENT 	<ul style="list-style-type: none"> * O/O of next higher HQ 	<ul style="list-style-type: none"> * Zone of Action of the supported unit * With priority that is directed 	<ul style="list-style-type: none"> * Next higher HQ
Reinforcing	<ul style="list-style-type: none"> * Answers calls for fire from reinforced unit when action will not interfere with missions assigned by higher arty HQ 	<ul style="list-style-type: none"> * Reinf Arty unit 	<ul style="list-style-type: none"> * Reinf Arty unit 	<ul style="list-style-type: none"> * Coordinate with Cdr of DS Bn and assigned as required 	<ul style="list-style-type: none"> * Reinf unit HQ or O/O of higher HQ 	<ul style="list-style-type: none"> * Zone of fire of the supported unit 	<ul style="list-style-type: none"> * Reinf Arty unit
General Support Reinforcing	<ul style="list-style-type: none"> * Same as Reinforcing 	<ul style="list-style-type: none"> * Reinf Arty Unit * Next Higher HQ 	<ul style="list-style-type: none"> * Reinf Arty Unit 	<ul style="list-style-type: none"> * Coordinate with Cdr of DS Bn and assigned as required 	<ul style="list-style-type: none"> * O/O of next higher HQ 	<ul style="list-style-type: none"> * Zone of fire of the force as a whole/w primary direction to that of the Reinf unit 	<ul style="list-style-type: none"> * Next higher Arty HQ * As allocated

APPENDIX FOUR



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